

REMARKS

In the Office Action dated October 5, 2004, claims 45-89, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks. Claims 1-44 and 72-89 have been canceled and claims 45-71 remain in the application.

Claim 63 was rejected under 35 USC §112, second paragraph as indefinite. Claim 63 has been amended to depend from claim 60 and the language "in step (d)" has been deleted. In view of this amendment, applicants request that this rejection be withdrawn.

Claims 45, 46 and 48-57 were rejected under 35 USC §102(b) as anticipated by Hawkins. Hawkins is directed to a method for reversibly binding DNA nonspecifically to magnetic microparticles having a carboxyl group coated surface. In Hawkins' method, magnetic microparticles equipped with carboxyl functionalities (hydrophilic) are brought into contact with a solution containing DNA under conditions suitable for binding the DNA to the hydrophilic functionalities on the surface of the magnetic particles. In contrast to Hawkins, in the present invention the DNA is bound via the hydrophobic functionalities on the surface of the solid phase. The hydrophilic functionalities in the present invention prevent agglomeration of the solid phase. Thus, the present invention describes the use of the hydrophobic groups on the surface of the solid phase for the immobilization of nucleic acids (page 5, lines 14-19) while Hawkins binds nucleic acid molecules using functionalized hydrophilic groups (i.e. carboxyl groups) on

the surface of the solid phase (column 1, lines 24-28). The present claims have been amended to clarify this issue. In view of the above amendments and discussion, applicants request that this rejection be withdrawn.

Claims 59-65 were rejected under 35 USC §102(b) as anticipated by Hawkins. Claim 59 has been amended to clearly indicate that the binding of the nucleic acids takes place via the hydrophobic groups. As discussed above, Hawkins binds his DNA via hydrophilic groups which produces different results than the present invention. In view of the above amendments and discussion, applicants request that this rejection be withdrawn.

Claims 66-67 were rejected under 35 USC §102(b) as anticipated by Hawkins. Claims 66 and 67 depend directly or indirectly from claim 45 which has been amended to clarify that the binding of the nucleic acids takes place via the hydrophobic groups. Since Hawkins binds his DNA via hydrophilic groups, Hawkins does not anticipate these claims and applicants request that this rejection be withdrawn.

Claims 70 and 71 were rejected under 35 USC §102(b) as anticipated by Hawkins. These claims have been amended to indicate that the hydrophilic groups prevent agglomeration and the hydrophobic groups bind the nucleic acids. In view of these amendments applicants request that this rejection be withdrawn.

Claims 45-69 were rejected under 35 USC §103(a) as obvious over Hawkins in view of Tang. Tang does not cure the above discussed deficiencies in Hawkins because Tang describes methods for synthesizing oligonucleotides

on a solid support material where a plurality of microparticles which have free hydroxyl and/or amino groups are utilized to form a covalent bond with the nucleoside. The unreacted free hydroxyl and/or amino groups are passivated by covalent binding to hydrophobic passivating groups like aryl groups (column 5, lines 16-23). According to Tang, the passivation serves to reduce the hydrophilic character of the surface and thus to prevent side reactions of unreacted amino/hydroxyl functionalities in a solid phase DNA synthesis. However, the resulting passivated functionalities are not of the hydrophobic manner (amide bonds, ester bonds, etc.). Consequently, the use of passivating groups is not suitable for modifying the carboxyl group coated surface as described by Hawkins. The problem underlying the present invention (i.e. to prevent agglomeration of the solid phase particles) would not be solved in this manner. Thus, Tang cannot be combined with Hawkins to arrive at the present invention. Applicants point out that neither Tang nor Hawkins disclose a method for binding nucleic acids where the binding of the nucleic acids takes place via the hydrophobic groups. In addition, applicants point out example 3 on page 17 of the present application which shows that the yield is considerably higher when using the present invention as compared to the COOH coated particles according to Hawkins. In view of the above discussion and amendments, applicants request that this rejection be withdrawn.

Applicants respectfully submit that all of claims 45-71 are now in condition for allowance. If it is believed that the application is not in condition for

allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, Applicants respectfully petition for an appropriate extension of time. Any fee for such an extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 02-2135.

Respectfully submitted,

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